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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,742	05/10/2005	Martin Honsberg-Riedl	1454.1593	7027

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STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

BAISA, JOSELITO SASIS

ART UNIT	PAPER NUMBER
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2832

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/521,742

Applicant(s)

HONSBURG-RIEDL, MARTIN ET AL.

Examiner

Joselito Baisa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 23-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 23-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 6/11/2007.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nakayama et al. [6593839] in view of Jin et al. [6512437], Ryoji [JP 61-167352] and Hjortsberg et al. [EP 440865].

Regarding claims 23 and 24, Nakayama discloses at least one winding 83 of a braided wire having 5 to 100, (96) individual wires that are electrically insulated from one another, the individual wires having an individual wire diameter within the range of from 10 μm to 50 μm [Col. 4, Lines 18-30, Figure 9].

Nakayama disclose the instant claimed invention above except for at least one core formed of a ferromagnetic core material, the core having at least two symmetrical core parts which are opposed to each other and separated by gaps therein to interrupt the magnetic circuit, at least one of the gaps being an air gap, all of the gaps having an essentially equal gap width with in the range of 2.0 mm to 10.0 mm,

a heat sink; and a cooling device to cool the wire winding, the cooling device comprising: a film formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the

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first polymer-thermally conductive filler composite material, the casting compound being in thermally conductive contact with the heat sink.

Jin discloses at least one core (2, 4) formed of a ferromagnetic core material, the core having at least two symmetrical core parts 2, 4 which are opposed to each other and separated by gaps **G** therein to interrupt the magnetic circuit, at least one of the gaps being an air gap, all of the gaps having an essentially equal gap width (Figure 1) with in the range of 2.0 mm to 10.0 mm [Col. 8, Lines 1-11, Figure 1] and [Col. 20, Lines 45-55, Figure 24].

It would have been obvious to one having ordinary skill in the art at the time of the invention to use at least two symmetrical core parts, which are opposed to each other and separated by gaps as taught by Jin to the inductor of Nakayama.

The motivation would have been to facilitate the use of high and low transmission signals that in close proximity to each other [Col. 3, Lines 63-67] and [Col. 4, Lines 1-5].

Ryoji discloses a cooling device to cool the wire winding, the cooling device comprising: a film formed of a first polymer 2, the film being in thermally conductive contact with the wire winding 4; and a casting compound 7 formed of a second polymer different from the first polymer, the casting compound being in thermally conductive contact with the heat sink (pole 5) [Abstract].

Ryoji discloses the instant claimed invention discussed above except for a first polymer-thermally conductive filler composite material; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material.

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Hjortsberg discloses a film 19 formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding 18; and a casting compound 19 formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use polymer-thermally conductive filler composite as taught by Hjortsberg to the heat sink and cooling device of Ryoji.

The motivation would have been to reduce corona effect [Col. 1, Lines 48-50].

Furthermore, it would have been obvious to one having ordinary skill in the art at the time of the invention to use the structure of Ryoji in view of Hjortsberg that utilizes a polymer-thermally conductive filler to the inductive structure of Nakayama in view of Jin.

The motivation would have been for dissipating heat from coil (Abstract of Ryoji) and low loss factor effect of the polymer-thermally conductive filler that encloses the conductor bundles of Hjortsberg [Col. 2, Lines 23-25].

With respect to claim 41, the claim is a method counterpart of structure of claim 23 above and this method steps therefore are inherent for manufacturing a transformer or choke coil.

Regarding claim 25, Jin discloses the core comprises at least two core parts 2, 4 which are opposed to each other across the gaps G and are separated from each other by the gap widths [Col. 8, Lines 1-5, Figure 1].

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Regarding claim 26, Jin discloses at least one of the gaps **G** is an air gap [Col. 20, Lines 45-55, Figure 1].

Regarding claim 27, Jin discloses the gaps **G** all have an essentially equal gap width [see Figure 1].

Regarding claim 28, Jin discloses the wire windings define an inner region and an outer region, and the gaps **G** of the core are positioned in the inner region [Col. 8, Lines 1-5, Figure 1].

Regarding claim 29, Jin discloses the core 1 is essentially symmetrical [see Figure 1].

Regarding claim 30, Jin discloses core formed of a material that can withstand high frequencies [Col. 2, Lines 1-5].

Regarding claim 31, Nakayama discloses the wire winding comprises a high-frequency braided wire having a multiplicity of individual wires that are electrically insulated from one another [Col. 4, Lines 18-30, Figure 9].

Regarding claim 32, Nakayama discloses the individual wires have an individual wire diameter that is selected from the range of from 10 μm to 50 μm inclusive [Col. 4, Lines 18-30].

Regarding claim 33, Nakayama further discloses the wire winding is formed from 5 to 100 individual wires [Col. 4, Lines 18-30].

Regarding claim 34, Nakayama discloses the component is a transformer [Abstract].

Regarding claims 35-40, Ryoji discloses a cooling device to cool the wire winding 4, the cooling device comprising: a film formed of a first polymer 2, the film being in thermally conductive contact with the wire winding 4; and a casting compound 7 formed of a second polymer different from the first polymer, the casting compound (epoxy resin, an adhesive) being in thermally conductive contact with the heat sink (pole 5) [Abstract].

Ryoji discloses the instant claimed invention discussed above except for a first polymer-thermally conductive filler composite material; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material.

Hjortsberg discloses a film 19 formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding 18; and a casting compound 19 formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material.

It would have been obvious to one having ordinary skill in the art at the time of the invention to use polymer-thermally conductive filler composite as taught by Hjortsberg to the heat sink and cooling device of Ryoji.

The motivation would have been to reduce corona effect [Col. 1, Lines 48-50].

Regarding claims 42, 43 and 44 the recitation of duty cycle and voltage ranges of AC voltage, they cannot be relied upon to distinguish over the combined references because they are seen as intended use (i.e., when the claim is directed to a circuit device, any recitation concerning the input or output signal of such circuit device or environment in which the circuit device is employed is not part of the inventive circuit device). Only structural and functional limitations are given patentable weight.

Response to Argument

Applicant's arguments with respect to claims 23-44 have been considered but are moot in view of the new ground(s) of rejection.

Nakayama discloses at least one winding of a braided wire having 96 individual wires that are electrically insulated from one another, the individual wires having an individual wire diameter within the range of from 10 μm to 50 μm .

Jin discloses at least one core formed of a ferromagnetic core material, the core having at least two symmetrical core parts (2, 4), which are opposed to each other and separated by gaps G therein to interrupt the magnetic circuit.

Hjortsberg discloses a film formed of a first polymer-thermally conductive filler composite material, the film being in thermally conductive contact with the wire winding; and a casting compound formed of a second polymer-thermally conductive filler composite material different from the first polymer-thermally conductive filler composite material.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joselito Baisa whose telephone number is (571) 272-7132. The examiner can normally be reached on M-F 5:30 am to 2:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Elvin Enad can be reached on (571) 272-1990. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joselito Baisa
Examiner
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jsb


ELVIN ENAD
SUPERVISORY PATENT EXAMINER
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